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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/317,056	05/24/1999	YASUTAKA NAKASHIBA	NEYM16.133	8595

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EXAMINER
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GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/317,056	<b>Applicant(s)</b> NAKASHIBA, YASUTAKA	
	<b>Examiner</b> Brian C. Genco	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,9,10 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,9,10 and 13-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 4, 2004 has been entered.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 9, 10, 13, 14, and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,326,230 to Pain et al.) in view of (Applicant's Admitted Prior Art, herein AAPA).

In regards to claim 1 Pain discloses a method for driving a solid-state image pickup device which stores, in a plurality of photo-electric conversion units (e.g., Fig. 1), signal charges corresponding to an incident light during a prescribed time period, each of said photo-electric conversion units being provided with an overflow drain (OFD) structure (e.g., element 64 of Figs. 3A-3C), excludes surplus charges from said photo-electric conversion units by an electric potential barrier (e.g., the electric potential barrier formed under element 62 of Figs. 3A-3C; wherein the potential barrier excludes charges as shown in Figs. 3A and 3B), said electric

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potential barrier being maintained at a first level between said OFD structure and each of said photo-electric conversion units during said prescribed time period (e.g., it is between element 60 and 64), reads out said signal charges by grouping said photo-electric conversion units into a prescribed number of regions (e.g., 1 region in this case), and outputs image signal from all of the photo-electric conversion units by repeating the read-out procedures, said read-out procedures being carried out during a time period other than said prescribed time period, said read-out procedures comprising the steps of:

raising up said electric potential barrier (e.g., Fig. 3C);

starting reading out said signal charges (e.g., Fig. 3C).

Pain does not disclose cutting off said incident light by a cut off means such as a mechanical shutter, however, AAPA discloses the use of a mechanical shutter to cut off incident light before reading out the signal charges (page 3, lines 13-16) for the very well known and established reason of eliminating the continual build up of excess charge by the photo-electric conversion units. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used Applicants admitted use of a mechanical shutter in Pain's invention in order to eliminate the continual build up of excess charge by the photo-electric conversion units.

In regards to claim 2 Examiner notes on that how much of an overflow barrier OFB potential barrier difference to secure is nothing more than a design matter that can suitably be determined by one skilled in the art according to the properties, etc. of the solid-stage pickup element that is used. Official Notice is taken. As such, it is only a matter of design choice to increase the potential barrier difference by a voltage greater than 0.4 V according to the

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properties, etc. of the solid-stage pickup element that is used. Examiner notes that Pain discloses to raise up the potential barrier by 0.4 V as disclosed on column 6, lines 57-60.

In regards to claim 9 see examiners notes on the rejection of claim 1. Pain discloses a horizontal overflow drain as shown in Figs. 3A-3C.

In regards to claim 10 see examiners notes on the rejection of claims 2 and 9.

In regards to claim 13 Pain discloses said signal charges are read out from said photo-electric conversion units through signal read-out portions (e.g., element 56 of Figs. 3A-3C) and the electric potential of said electric potential barrier during the read-out step is deeper than an electric potential which is applied in signal read-out portion during the times except said read-out step (e.g., see Fig. 3C).

In regards to claim 14 see examiners notes on the rejection of claims 2 and 13.

In regards to claim 17 see examiners notes on the rejection of claim 13.

In regards to claim 18 see examiners notes on the rejection of claims 2 and 17.

In regards to claims 19-22 see Examiner's notes on the rejections above.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claims 5, 6, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,326,230 to Pain et al.) in view of (Applicant's admitted prior art) in further view of (USPN 5,903,021 to Lee et al).

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In regards to claim 5 see examiners notes on the rejection of claims 1 and 9. Note that Pain does not teach to have a vertical OFD. Applicant's admitted prior art does teach to have a vertical OFD, however there is no explicit motivation in applicant's admitted prior art to use applicant's admitted vertical OFD in Kawahara's invention. Lee et al, herein Lee, teaches that either a lateral or vertical OFD can be used where in using a vertical overflow drain uses less photodetector area and thus increases the fill factor (column 6, lines 40-56 Lee). Therefore it would have been obvious to one of ordinary skill in the art to have used a vertical OFD in Pain's invention instead of a lateral OFD in order to increase the fill factor.

In regards to claim 6 see examiners notes on the rejection of claims 2 and 5.

In regards to claim 15 see examiners notes on the rejection of claim 13.

In regards to claim 16 see examiners notes on the rejection of claims 2 and 15.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 571-272-7364 or by fax at 571-273-7364. The examiner can normally be reached on Monday thru Friday 8:30am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached at 571-272-7950. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian C Genco  
Examiner  
Art Unit 2615

May 25, 2005

Reviewer



Lin Ye  
Examiner  
Art Unit 2615